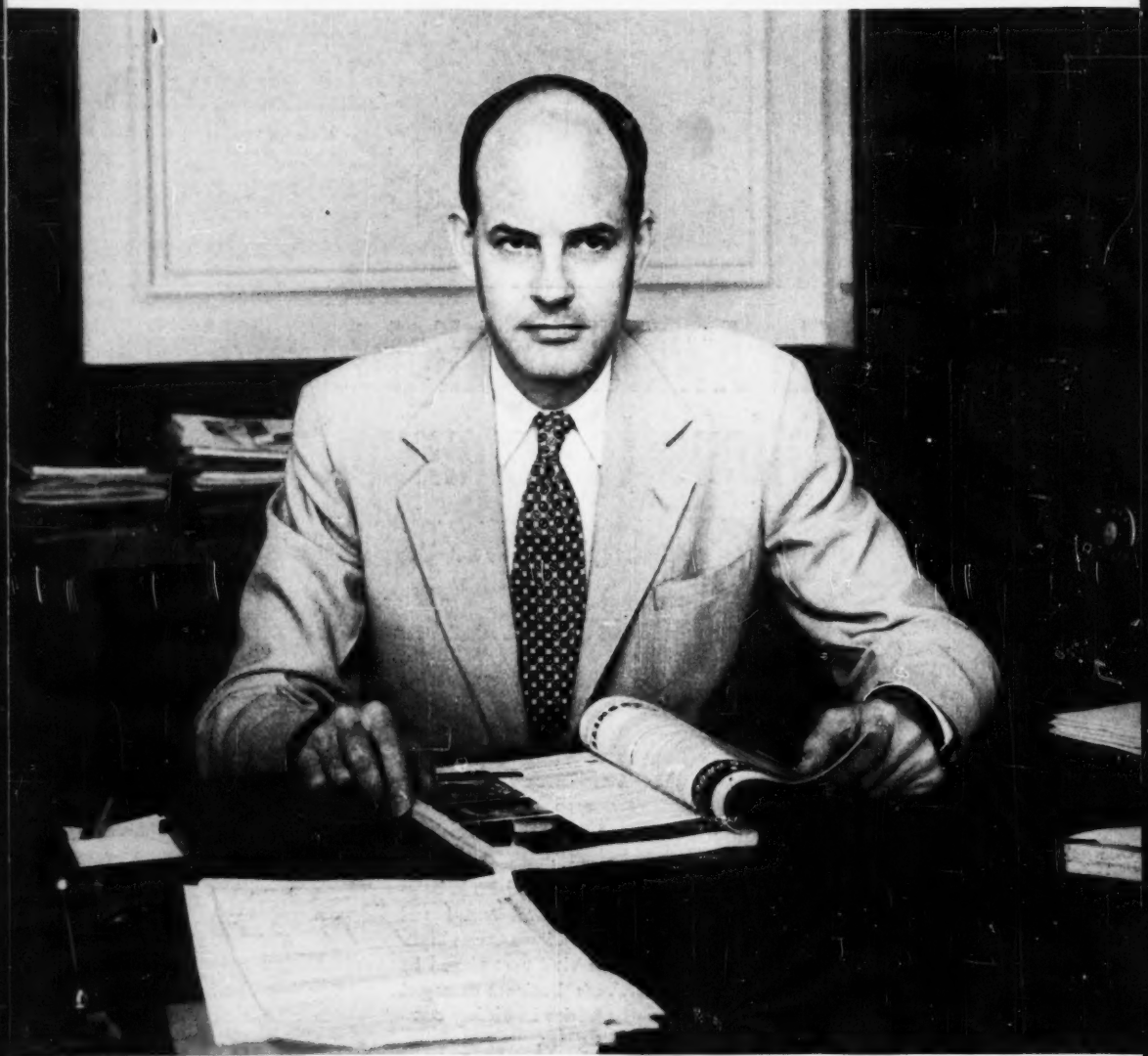
JUNE 25, 1951 NEWS ISSUE

Electrical World

Price 35 Cents

A McGRAW-HILL PUBLICATION



George S. Dinwiddie, New President of New Orleans Public Service, Inc.

Sporn Dedicates Tanners Creek ..... Page 16

Metal Situation: Better or Worse? ... Page 30

Charles A. Collier, Vice-president of Georgia Power Company, accepts the Charles A. Coffin Award from Ralph J. Cordiner, President of General Electric, at the 19th annual EEI convention. Louis V. Sutton, retiring President of EEI, is at the right.

Coffin Award highlights utility contributions to community progress

COFFIN AWARD—Established 29 years ago, the Charles A. Coffin medal is awarded each year to an electric utility which has made an outstanding contribution to the public benefit and industry progress.

BETTER FARMING—Winter Grazing Contest, sponsored by Georgia Power Company, is devoted to revitalizing agriculture. Like the Better Home Towns program, it has helped reverse the trend of migration from the state.

Georgia Power Company achievements are outstanding examples of public benefits under free enterprise system

In earning the Charles A. Coffin medal, the Georgia Power Company has not only won recognition for an outstanding achievement in community betterment, but has also performed an important service for the electric utility industry.

Through its activities in helping to solve local social and economic problems, it has highlighted the vital part played by the nation's business-managed electric utilities in aiding community progress.

Included in the Georgia Power Company achievements are the successful promotion of better living standards through the development of clean, attractive towns, a practical program for the advancement of better farming, and a campaign for attracting new business and industries. The results are reflected in part by the 1899 new manufacturing and service establishments brought into the state, representing over $51,000,000 new capital, $30,000,000 annual payroll, and 12,300 workers.

Congratulations to the Georgia Power Company. General Electric Co., Schenectady 5, New York.

MORE POWER TO AMERICA

GENERAL ELECTRIC

301-164

The Electrical Week

INDUSTRY MOBILIZATION—Continued cutbacks in the flow of basic materials to manufacturers of heavy electrical equipment poses threat to electric utility expansion program (p 4) . . . Military production has tripled in the last year, but full impact of defense program won't come until 1952 or early '53 (p 5) . . . C. J. Grossi has joined the Boiler section of NPA's Engine and Turbine Division (p 5) . . . Industry M orders are listed on p 5.

WASHINGTON—E. Robert de Luccia has resigned as chief of FPC's Bureau of Power to become chief engineer of Pacific Power & Light Co's Yale Project. Francis L. Adams succeeds him at FPC (p 13) . . . Lower Valley Power & Light, Inc. (Wyo.) granted an FPC license for hydro project on Strawberry Creek (p 13) . . . Robert I. Millonzi is sworn in as a member of SEC (p 20) . . . House Ways and Means Committee has dropped a plan to extend the 3 1/3% electrical energy excise tax to public power agencies and voted to repeal tax on power sold by private companies (p 20).

ELSEWHERE—World's largest pump, installed at Grand Coulee Dam, has begun to divert waters of Columbia River into Coulee Reservoir (p 6) . . . Boston Edison Co has been supplying electricity to proper Bostonians and their neighbors for 65 years (p 11) . . . And materials shortages plaguing utilities are not likely to get worse (p 30).

• • •

The House tentatively approved renaming of Buggs Island Reservoir in honor of Rep John H. Kerr, North Carolina Democrat who has long championed the federal project.

Depa Administrators, too, just "fade away." At least, that's the impression you get from last week's announcement that Clifford B. McManus had resigned, "to return to private industry in Atlanta." Interior has decided the wording of the announcement was slightly premature. Now comes the statement that McManus will officially remain on the job until July 1, and then be succeeded by James F. Fairman, his deputy.

Round two of the fight in Kentucky between a power company and a co-op has begun, with 60,000-kw of capacity and transmission lines awaiting the winner. In December, after the Public Service Commission authorized East Kentucky Rural Electric Cooperative Corp to borrow money to build the plant, Kentucky Utilities Co appealed the decision. Now the commission has approved construction of a similar plant by the power company and the co-op has appealed. The co-op, which buys its power from KU, contends the private company would not need the additional generation once the co-op gets its own plant and lines.

Florida's Gov Fuller Warren vetoed legislation designed to permit use of curb-side windows for paying utility bills, making bank deposits, and similar transactions on the grounds that the bill granted too broad powers and that such windows presented a traffic hazard to pedestrians.

Reason for the recent resignation of C. F. Terrell from his job as executive director of the Nebraska Public Power System was because of "too much internal politics, not enough sincere cooperation."

The IBEW, AFL, settled with Westinghouse Corp for a 9¢ hourly wage increase, subject to approval by the Wage Stabilization. The electrical union represents 1,500 employees in 16 Westinghouse plants.

Contradiction Dept—A "Clean-Up Week" campaign centered on the municipally-sponsored sale of GE garbage disposers was inaugurated in Herrin, Ill., last month with a large street parade. While the parade was in progress an airplane flew over, bombarding watchers with leaflets urging them to cooperate to make Herrin a cleaner place to live in.

Notes From The News

Export of electric power from Austria to Western Germany will be increased to 1 billion kwhr annually within the next two years as part of the Austrian hydroelectric plant expansion program . . . St. Louis Board of Public Service is seeking bids for a plant to generate electricity as a by-product of rubbish incineration . . . The public address system failed recently as Princess Elizabeth opened a British exhibit designed to extoll the growth of electric power in England. Reason: PA had to be shut down because of a 10% power cut ordered because of a fuel shortage . . . The State Electricity Commission of Victoria, plans to install two 60,000-kw hydro generators, largest to date in Australia, at its Big Eildon Dam.

R. FRANK BROWER, who is serving as director of Power Supply Division of the Defense Electric Power Administration

RICHARD J. GRANT, a Depa consultant since February, now head of Major Equipment Scheduling Branch of Depa

Possibility of More Material Cutbacks Poses Threat to Expansion Program

A serious threat to the electric utility expansion program appeared last week as defense agency planners disclosed the possibility of continued cutbacks in the flow of basic materials to manufacturers of heavy electrical equipment.

Ironically, this came as Mobilization Director Charles E. Wilson, for the second time within a week, predicted electric power supply would be a critical problem for expanding defense industries in the next 12-18 months.

For the third quarter of this year, the Defense Production Authority has ordered cutbacks averaging about 25% in the steel, aluminum, and copper requested by makers of turbines and generators. Little hope is held out that much—if any—of this cut will be restored.

In addition, a similar reduction may be made in government allocations for the fourth quarter of this year. However, National Production Authority officials have presented a strong case against such cuts, and hope to win the argument in time to get larger allotments in the fourth quarter.

Because the completion of heavy equipment requires from 12 to 18 months, cuts made in the supply of raw materials to manufacturers this year would not show up in the delivery schedule until late 1952 or early 1953. This is the very time when the new chemical, aluminum, and steel plants will be ready to roll, and the Atomic Energy Commission will increase its electric power needs.

Defense planners estimate the 25% reduction approved for the third quarter may cut into next year's 7 million kw expansion program to the tune of 1 million kw.

Further reductions, of course, would take a deeper bite into the three-year expansion goal of nearly 22 million kw.

Because of long lead nature of heavy equipment orders, it is estimated the third quarter cut will not interfere with attainment of the mid-1952 expansion goal. The 1 million kw curtailment would show up in the load-peak period of the year, when its absence would be most felt.

Continued curtailment of allotment of basic materials on an average 25% basis might take 4 million-kw bite out of the expansion program, it is estimated.

Some heavy equipment plants have been operating four days a week, off and on, and the raw material reductions would further limit production. Thus, plant facilities would remain idle at a time when other industries will be going full blast.

Because of the long-term budgeting of work on heavy equipment, a decrease in allotment of a single raw material may disrupt production out of all proportion to the savings in materials.

For instance, a generator held up because of lack of copper would occupy plant space which could be used for assembling other heavy equipment.

One excuse given for the third quarter basic material cutback in this field is that DPA did not have time to study fully the merits of each industry, hence gave across-the-board cuts to all but the industries directly producing military materials.

Cuts Impair Commitments

"In such a situation," one official put it, "DPA was forced to use an axe to trim requests. It is hoped that with more time for study of the fourth quarter allotment, a scalpel can be used."

However, there is little doubt about the effect of the material cuts. Electric power commitments for defense industries can be met only if third quarcuts are restored, and fourth-quarter allocations are 100% of those requested.

"Failure to restore the cut," one official said, "May well mean that power use will be curtailed rather than merely interrupted in some critical areas."

Closer Coordination Planned

Closer coordination of the agencies dealing with electric power requirements, which should result in a better understanding of the industry's materials needs, already is in the making. First step in this direction was the establishment last week of a Major Equipment Scheduling Branch within Defense Electric Power Administration.

NPA's Engine and Turbine Division will continue to claim materials for the makers of heavy power equipment. But it will work closely with the new Depa branch in translating material requests into terms of power facilities that will be needed for defense production 12 to 18 months hence.

Heading the new Depa section will be Richard J. Grant. A Depa consultant since February, he is on leave from Commonwealth Edison Co of Chicago.

Military Production Tripled in Year, But Full Impact Won't Come Till '52

Deliveries of military goods, just a year after the outbreak in Korea, have jumped to 300% of what they were in June of 1950.

During fiscal 1951 the Defense Department got $19 billion worth of military goods. This year the figure will hit nearly $40 billion. That's in hard goods alone.

Full Impact Not Yet Felt

But even with military production tripled, the full impact of military programs on the economy of the country won't be felt until calendar 1952 or possibly the first quarter of 1953. At that time, the U. S. will be channelling a minimum of 20% of the national output into defense and defense-support production. That's a little less than half of the take in World War II.

The basic program for defense is simple. Battle victories in Korea are not likely to change it. According to Defense Secretary Marshall, the plan for national security is in two stages: (1) A rapid build-up to a minimum level of safety, and (2) maintenance of this level of mobilization, plus a capacity for immediate expansion.

Cost Will Be High

All this is going to cost plenty. Figuring what was made available to the armed services during fiscal 1951 and what is contemplated for next year, the total runs to nearly $114 billion. To keep the level of mobilization the Defense Department will probably have to ask for a minimum of $70 billion for the next two or three years. And inflation is already eroding at least 20% of appropriated funds.

The defense effort should be hitting the maximum impact by July 1, 1952. In the meantime, the Defense Department, through the munitions board, wants to avoid collecting huge stocks of items far in advance of actual needs. It prefers a large number of producers ready to go.

Even so, stockpiling is on the increase. Since the first of January, stockpiling alone has reached more than a billion dollars. Most of this has come from countries that might well be overrun by invasion should war come.

Taking a look at industry and where it has gone since the Korean invasion, you find the build-up a lot more rapid than the delivery rate to the Defense Department. Here's what has happened to steel and other basic metals in the year since Korea:

Steel Use Doubles

In June 1950 the military and those industries we have since begun to call "defense-supporting," used 1.5 million tons of finished steel. This June they will use 3¼ million tons.

Another way of putting it: Last June the military and defense supporting industries took 25% of output. This June they will take 50% of an expanded output.

Defense Takes 50% of Steel

The steel industry, then, is devoting itself 50% to defense. Of this, 12% is going to strictly military goods and the balance to such purposes as electric power, AEC, railroads, shipping, mining machinery, agricultural equipment—the whole range of industries National Production Authority decided was so important that we couldn't mobilize without them. Half of steel for defense, then, is the tonnage picture.

The copper industry's conversion to mobilization is probably 65%, compared to steel's 50. It takes 90% of copper rod and bar production to fill rated orders; 50% of wire mills products, 75% of copper base alloys, and 60% of plates, sheets and strip. The degree of copper's conversion to mobilization will probably increase, as demand is rising and no new production is in sight.

Aluminum output is going about 70% to mobilization purposes now, but this will decline as new production comes in.

Nickel is going 80% for mobilization, with no relief in sight.

To build new weapons, and add to the stockpile, the Defense Department figures that during 1952 it will need 13% from the total output of steel, 22% of the total output of copper; and 32% of total aluminum output.

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Industry M Orders

The following M order amendments of interest to the electrical industry have been issued by National Production Authority. Orders not of interest have been omitted. Copies of orders may be secured from National Production Authority, Washington 25, D. C., or any regional office of the Department of Commerce.

Amendments to Previous Orders

Direction 1 to M-1 and Direction 1 to M-6 provide assistance in handling orders for September delivery of **iron** and **steel** by postponing to July 7 the date on which authorized Controlled Materials Orders will have preference over DO-rated orders under CMP. Also instruct iron and steel producers to continue providing carbon steel products to warehouses on the basis of 85% of average monthly shipments during the base period. **Amendment to M-15** clarifies definition of the term **zinc** so that any alloy in which percentage of zinc by weight is more than 50% is excluded.

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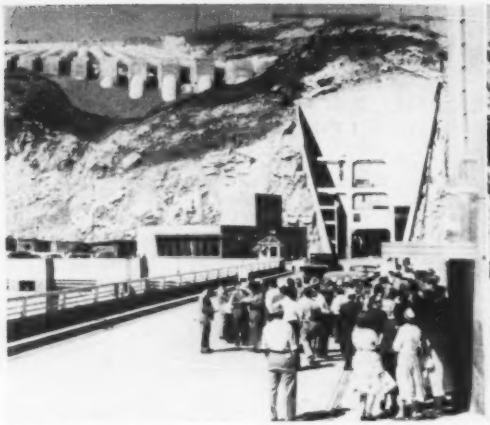
Joins NPA Boiler Section

C. J. Grossi, Combustion Engineering-Superheater, Inc, has joined the Boiler Section of National Production Authority's Engine and Turbine Division.

June 25, 1951 ELECTRICAL WORLD Vol. 135, No. 26
Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y. Executive, Editorial and Advertising Office: McGraw-Hill Building, 330 W. 42nd St., New York 18, N. Y.** Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.
Subscriptions: Address correspondence to Electrical World—Subscription Service, 99-129 N. Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 18, N. Y. Allow ten days for change of address.
Please indicate position and company connection on all subscription orders.
Single copies 35¢. For the United States and possessions $6 a year, $9 for two years. Canada, $7 for one year, $11 for two years, $14 for three years. (Canadian money, at par.) Pan-American countries, $15 for one year, $25 for two years, $30 for three years. All other countries $20 for one year, $30 for two years, $40 for three years. Entered as second class matter, November 16, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in USA. Copyright 1951, by McGraw-Hill Publishing Company, Inc. Permission required to reproduce any of contents.



CROWD OF 2,000 gathered for ceremonies setting vast Columbia Basin Reclamation Project officially in operation. Left picture shows upper sections of pumping plant (left center) and outlet pipes from 12 pumps which carry water uphill to headworks of feeder canal, shown in right picture. In that view, water rushes out of headgate at extreme left

World's Largest Pump Starts to Fill Coulee Reservoir for Basin Project

Waters of the Columbia River started down an Ice Age detour again June 14 when a 65,000-hp motor at Grand Coulee Dam put the world's largest pump, first of a battery of 12 to be installed, on the line to begin filling Coulee Reservoir.

The pump sent 720,000 gal of water a minute from the dam's forebay through a 12-ft outlet pipe to a feeder canal and thence to the reservoir. The 27-mile, man-made lake will fill in a year, and water will reach the first 87,000 acres of the Columbia Basin Irrigation Project next spring.

Although the pump was officially put in continuous operation on the 14th, 70,000 acre-ft had already been pumped into the reservoir.

A second pump of similar size will be in operation late this month and four more motor-pump units are authorized for installation under the USBR force account.

At the same time the pump went into operation, the 17th main 108,000-kw Coulee Dam generator was completed, bringing the project's total capacity to 1,866,000 kw. The 18th and final generator is scheduled for completion late in August. It will bring installed capacity to 1,974,000 kw, including three 10,000-kw station service generators.

More than 2,000 persons at the ceremony watched water gush from the first outlet pipe after Interior Secretary Oscar Chapman signalled for pump operation in a telephone message from Washington.

At the site, Reclamation Commissioner Michael Straus relayed the word for Arthur S. Herman to turn the switch to set the motor spinning.

Speakers during the ceremony included Straus, A. F. Darland, chief engineer at Coulee; H. A. Parker, district manager, USBR; Frank A. Banks, former district manager; H. T. Nelson, regional director; Jake Weber, president of the Associated Columbia Basin Irrigation Districts; John Kates, British Columbia minister of labor, representing Premier Manning; and William Galbraith, representing Washington's Gov Arthur Langlie.

In a special message, President Truman stated: "Today's action hastens the day when we can have more new farms and more new homes that will mean more wealth and security for all of us to share."

GRAND COULEE Irrigation Project is shown in aerial view. Machinery in pumphouse (1) lifts water from dam through 12-ft pipes (2) into feeder canal (3), through which water flows to reservoir partly filled by recent test pumping

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Every lightning arrester is rated for operating tolerance. This is *added to* average published values. More important, however, *it is deducted from the arrester's protective function!* The lower the tolerance, the higher the protection--the more safety you get from your arrester investment... O-B Thorex lightning arresters have brought a radically low tolerance range to the American power industry, in terms of less than + 10 per cent sparkover and less than + 5 per cent IR discharge voltages... On older apparatus this added protection may be vital, since insulation levels can be considerably below new, modern standards. On more recent equipment, the added protection made possible with the O-B Thorex, is welcome insurance for costly station investments... Investigate the improved operating standards made possible by the advanced protective characteristics of Thorex arresters.

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Delivery time has been cut too because our production is now concentrated on the new flexible unit. Also important, vital raw materials will be conserved for use on this new single model rather than stocked for use in several models of limited application.

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To get the complete story on how this new, re-designed AFR regulator can cover all loading conditions for your 15 kv feeders, call your nearest Allis-Chalmers dealer, or write to Allis-Chalmers, Milwaukee 1, Wisconsin.

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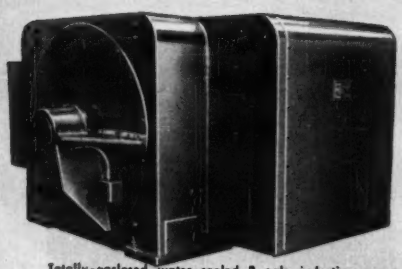
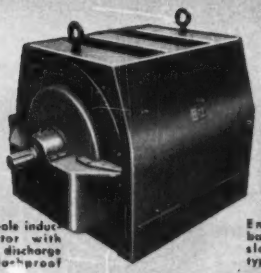


Totally-enclosed water-cooled 2-pole induction motor, 2000 hp, for contaminated atmosphere where quiet operation is essential.



Large 2-pole induction motor with top air discharge and splashproof air inlets.

Enclosed, self, base-ventilated, sleeve bearing type motor.

WHATEVER THE CONDITIONS

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Indoors or outdoors, hot or cool, clean or dirty, damp or dry—if a big motor is called for, Elliott is the answer. For Elliott famous "Fabri-Steel" construction permits easy and complete adaptability of the enclosure to the need. Tell us your conditions—the partial showing on this page will indicate how well we can meet them. Bulletins on request.

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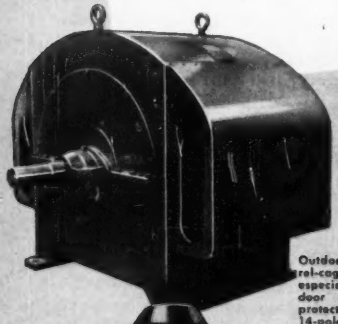
Smaller motors in integral sizes are built by the Crocker-Wheeler Division, Elliott Company, Ampere, N. J.

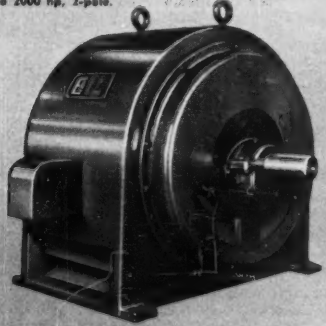


Outdoor splashproof squirrel-cage induction motor especially designed for outdoor installation without protective covering. 150 hp, 14-pole to 2000 hp, 4-pole. 250 hp to 2000 hp, 2-pole.

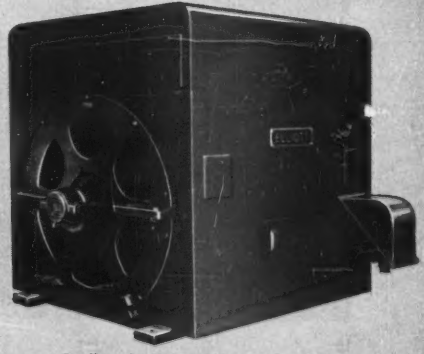
Wound rotor induction motor. Simple, strong, fabricated construction, sleeve or anti-friction bearings. Available in all types of enclosure.

Typical splashproof 2-pole squirrel cage induction motor (700 hp up). A long forward step in 2-pole design. Elliott welded steel construction enables widest variation in type of enclosure.

Vertical outdoor splashproof squirrel-cage induction motor. Can also be made in open dripproof or indoor splashproof with minor changes in ventilating baffles.



Typical dripproof squirrel-cage induction motor, four to 14 poles, 150 to 3800 hp.



Totally-enclosed fan-cooled motor, cooled by heat exchanger located at top of unit. Two-pole ratings 300 to 4000 hp. For lower speeds, in sizes equivalent to 50-hp, 14-pole to 3000-hp, 4-pole.

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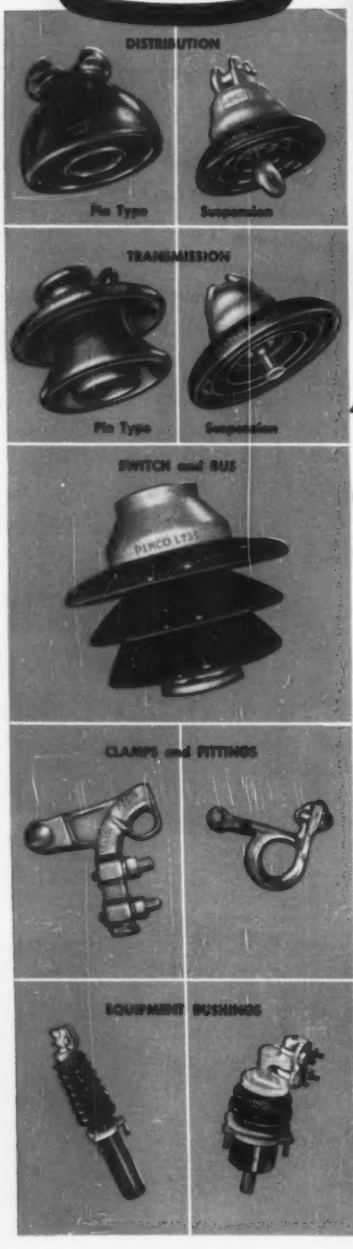

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5. Have been manufactured since 1929 by approved Pinco processes.

See Page 38, Pinco Catalog No. 49
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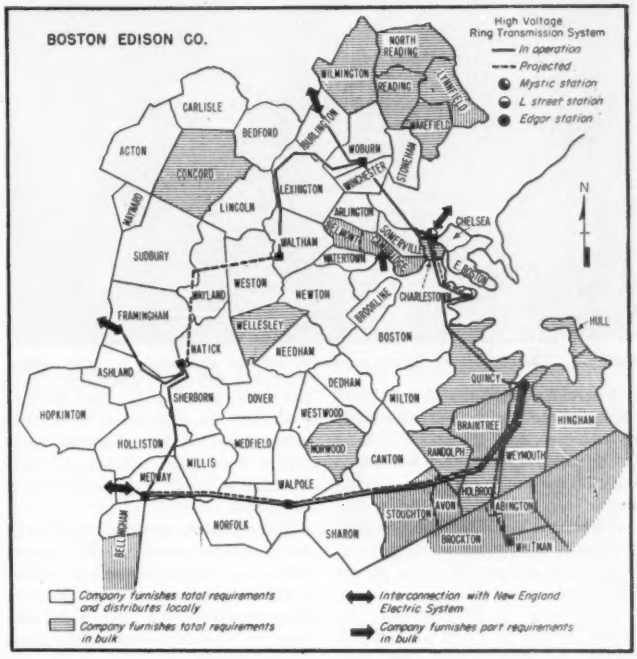
It Electrified the Proper Bostonians

For 65 Years, Boston Edison Co Has Supplied Power to Beacon Hill and Towns Paul Revere Awakened on His (Unlighted) Midnight Ride

For 65 years now, Boston Edison Co has been supplying power to a lot of proper Bostonians and the residents of many a proper community in the suburbs. The roster of service area towns reads like Revolutionary history. The midnight electricity burned by girls at Wellesley is Boston Edison's, supplied to the town in bulk. The electric welding tool used by a worker in Charlestown Naval Shipyard draws power from nearby Mystic Station at Everett, newest plant on the the 639,000-kw system.



Supplies 1.5 Million Persons

In all, Edison furnishes electricity at retail to nearly 1.5 million persons. More than 200,000 of its 378,164 residential customers live in Boston. The company, largest urban utility in New England, also supplies energy at wholesale and retail to 40 communities within 30 miles of The Hub.

The company is an old-timer, but a progressive one. Last year it won nationwide attention for its aggressive selling of electric appliances. During 1949, Boston range sales went up 59% despite an existing nationwide slump and intensive gas competition. Last year, 861 ranges were installed, largest number in company history. Television saturation is now 42%, and estimates show it alone brought in $1.5 million revenue to the company in 1950. Other appliance saturations have gone up considerably in the area since 1945: Ranges, from 5 to 12%; refrigerators, 57 to 83%; washing machines, 56 to 67%; vacuum cleaners, 49 to 60%; radios, 93 to 110%; and water heaters, 0.5 to 2.5%.

Aids Dealer Campaigns

The company merchandizes electrical goods in downtown Boston and suburban stores and cooperates vigorously in outside dealer campaigns.

Boston Edison was also cited last year for its employee relations. The number of employees has remained fairly constant at about 3,400 for the last ten years, and labor turnover is negligible. In 1950, average earnings of workers, excluding executives and officials, was $3,772, compared with $3,565 in 1949 and $1,988 in 1940.

Near the end of the year employees voted to switch from an independent union and become members of the Utility Workers of America, CIO. The change did not disturb the balance between management and workers, since the union shortly afterward signed contracts, giving them substantial wage increases, that will run until March 31, 1953. In addition, the company put into effect a non-contributory pension plan as an amendment to the contributory plan that had been in effect since 1938.

Continual plugging to build new load has helped the utility weather economic changes in its territory. Commercial and residential service is constantly expanding. Annual residential consumption during 1950 ranged from 979 kwhr in Chelsea (only community below 1,000), to 4,329 in Dover. One half the communities served exceeded 2,000 kwhr per customer. The average for Boston stood at 1,017, and for the system, 1,326. Energy consumption rose 131 kwhr, exceeding any two preceding years.

Industrial load has risen apace with

Growth of Boston Edison Co 1946-1950

	1946	1950
Number customers' meters (Dec. 31)	446,797	483,979
Installed capacity (kw)	507,910	639,160
Peak load (kw)	565,145	754,320
System output (kwhr)	2,435,399,645	3,271,965,948
Total kwhr sold	2,182,127,596	2,945,440,408
Plant investment (Dec. 31)	$205,151,903	$249,847,507
Gross Revenue	50,473,162	69,335,041

JAMES V. TONER, Boston Edison president, outlines operations in radio address

commercial and residential, with Navy yards, arsenals, and heavy industrial installations taking the bulk. To meet the increase, the company has added a 50,000-kw unit to the Mystic Station and an 81,250-kw unit to Edgar Station since the war. A second 81,250-kw unit is now under construction at Edgar, and is expected to go on the line in 1952.

The three 50,000-kw units at Mystic operate at 1,250 psi and 900 deg F. In 1950 average coal consumption per kwhr was .811 lb. Output was 944,367,000 kwhr. Edgar unit operated at 1,450 psi and 1,050 deg F. It produced 605,166,000 kwhr on the reheat cycle at a coal equivalent of .736 lb per kwhr.

Other important engineering work has been completed recently. A 110-kv transmission cable has been installed between Mystic Station and Woburn and a 110-kv line built from Woburn to Waltham. A second 110-kv overhead circuit has been built between Framingham and Medway and another between Medway and Edgar. A new line has been constructed between Braintree and Kingston in southern Massachusetts.

A 40,000-kw frequency changer (60-25 cycles) was installed recently at L Street Station, Boston, to interconnect Edison and Metropolitan Transit systems. The company has pushed interconnection for 31 years. Through ties with the New England Electric System it can send power to or take power from all New England states except Maine, in addition to New York, New Jersey, Pennsylvania, and Maryland.

The company estimates it will need $65.3 millions in new capital for the 1951-54 period, of which $32 million is expected to come from investors in new money. Of the total, $19.2 millions will be used to construct generating equipment.

•

Power Utilization Group Considered in Vermont

Plans have been made to set up a Vermont Electrification Utilization Council which will serve as a center for information on electrical equipment and which will coordinate research and other projects involving use of electric power.

The council will include one member of every power company in Vermont, as well as members of the Vermont Extension Service.

Preliminary goals were outlined at a recent conference.

•

Ohio PUC Official Resigns

Norton Rosentreter, secretary of the Ohio Public Utilities Commission since April, 1950, has resigned.

Utility Plans Air Team to Check Bomb Damage

Helicopter reconnaissance, with trained observers, for immediate assessment of damage in case of enemy attack is being planned by Philadelphia Electric Co. In making the announcement, J. A. Ten Brook, PE assistant development engineer, said plans first must be approved by Philadelphia Civil Defense authorities.

"As we see it," he said, "we have an excellent chance to supply service to all who need it, based upon a one, two, or three bomb attack."

Most of the company's main power cables are underground and probably would survive an atomic attack.

Philadelphia Electric has already established a coordinated short wave net, supplemented by motorized courier service. In addition, it has stockpiles of battery operated field telephones and wire in strategic locations, which can be strung into other areas left without communication facilities.

•

Keystone Utility to Spend $25 Million on Expansion

Output of Pennsylvania Water & Power Co's steam generating plant at Holtwood, Pa., will be tripled by the addition of a new 66,000-kw unit. This expansion is part of a $25 million program to meet growing power demands in the Maryland-Pennsylvania area. The program will require three years for completion.

The plan contemplates the modernization and enlargement of coal recovery and washing facilities on the Susquehanna River. These facilities reclaim "river coal" for use as fuel in the steam plant. Cost of these two projects will be about $20 million.

Other additions and improvements will cost about $5 million.

•

Substation Blast Injures 2

An explosion at a Potomac Electric Power Co substation in Washington, D. C., last week injured two workers and cut off power in a large part of Georgetown. The blast occurred when a tree fell on electric lines at a street intersection breaking the wires. A circuit breaker failed to operate and a transformer blew up. The workers suffered burns and were taken to the hospital.

E. ROBERT de LUCCIA, who resigned as chief of FCC Power Bureau to head Yale Project of Pacific Power & Light Co

FRANCIS L. ADAMS, who will succeed de Luccia. Adams served as assistant chief of bureau before he was promoted

De Luccia Resigns from FPC Bureau to Head Yale Hydroelectric Project

E. Robert de Luccia has resigned as chief of Federal Power Commission's Bureau of Power to become manager and chief engineer of Yale Hydroelectric Project of Pacific Power & Light Co on the Lewis River in Washington.

FPC has appointed Francis L. Adams, assistant chief of the Bureau, to succeed him.

Yale Project, to be rushed to completion within 18 months, has defense plant status because of its importance in helping to meet winter peak load requirements in the power-short Pacific Northwest. Estimated to cost $26,450,000, the 100,000-kw development will supplement output of the government's Bonneville and Grand Coulee installations.

Joining FPC in 1938, de Luccia organized the Bureau of Power on his return from Army service in 1945. He has served as its head since that time.

A graduate of Massachusetts Institute of Technology, he served as one of three negotiators for the United States in developing a new treaty with Canada concerning division of water at Niagara Falls for power production. He has represented FPC on the Inter-Agency River Basin Committee and is a consultant on power plants for Economic Cooperation Administration. A member of many professional societies, he has represented this country at international power conferences in Stockholm, Paris, London, and Lake Success.

Adams, a graduate of the University of North Carolina and Lowell Institute, has been with the commission since 1934. He served as assistant director of the Denver regional office and regional administrator of FPC's Fort Worth office before being named Power Bureau chief.

•

New York to Observe 50th Year of Farm Lines

The fiftieth anniversary of the first farm power line in New York State will be celebrated on June 30 at the farm of Clarence Timmerman on Snells Rush Road, about halfway between Little Falls and St. Johnsville, according to the New York Farm Electrification Council of the College of Agriculture, Cornell University. Snells Rush Road is the site of the first 4½ miles of rural line in New York.

Sponsored by the council, six New York power companies, the New York State College of Agriculture and the state public service commission, the celebration will include exhibits of past and present methods of performing farm operations, demonstrations of electrical applications on the farm and in the farm home, and a presentation of General Electric Co's House of Magic.

PUD Heads Ask Inquiry Into WWP Rate Increase

Charging Washington Water Power Co, Spokane, has been spending large sums of money spreading "misinformation about public utility districts" and Grand Coulee Dam, Washington State PUD Commissioners adopted a resolution at their semi-annual convention in Kelso calling upon Congress and the State of Washington to investigate the company's request for a rate increase. Funds spent in this fashion should have been utilized in holding down power rates, the commissioners contended.

Congress also was asked to reconsider its tentative action deleting funds for projects at Ice Harbor, Albeni Falls, and The Dalles from pending appropriations. The commissioners declared this deletion threatens "the entire economy of the Northwest."

The commissioners expressed opposition to a proposed 3½% federal energy tax on PUD's, describing taxes on all utilities, public and private, as hidden taxes passed on to the user.

•

Wyoming Utility Granted 50-Year License by FPC

The Lower Valley Power & Light, Inc, Freedom, Wyoming, has been granted a 50-year license by the Federal Power Commission for the construction, operation, and maintenance of a hydroelectric project on Strawberry Creek, Lincoln County.

Estimated to cost $620,000, the project will include a low concrete dam near Bedford, forming a reservoir with an area of about five acres; an 11,300-foot steel pipe line; a powerhouse containing two 500-kw units, with provision for ultimate installation of a third of equal size; and a substation.

•

To Build 40,000-Kw Unit

Southern Indiana Gas & Electric Co has announced plans for a 40,000-kw generating station on the Ohio River above Newburgh, Ind. To be completed by 1954, this $12-million unit is part of a $20-million long-range expansion program for electric and gas facilities. The new F. Bayard Culley station will operate on steam at 1,250 lbs and 950 F.

Co-op Appeal to Block Massachusetts Line Lost

Massachusetts Department of Public Utilities has dismissed for want of jurisdiction an appeal by Halifax Electric Co-operative, Inc, against the selectmen of Leyden, Mass., who authorized Western Massachusetts Electric Co to erect poles and wires on certain roads where service was furnished by the co-op. The finding points out that the legislature gave the selectmen the power to determine whether pole lines should be permitted within the municipality and that no appeal to the commission from such a grant is permissable unless the proposed line affects some other municipality as well.

Western Massachusetts already operates within a portion of Leyden and was requested to extend its service into the area supplied by the co-op but has not promoted such extension on its own. Its many requests to buy the lines of the co-op within Leyden have been turned down. Western Massachusetts is opposed to duplication of lines, especially under existing national conditions, and extension of its lines hinges upon willingness of the co-op to sell its lines in Leyden.

•

Kootenay Lake Span May Be Longest in the World

Believed to be the longest transmission span in the world is one just over 2 miles in length planned to cross Kootenay Lake in British Columbia. Actually the distance is to be 10,650 feet. The line will be an extension of the 170-kv line of the Consolidated Mining & Smelting Co of Canada, Ltd. About 75 Mva will be carried from the company's plants on the Kootenay River near Nelson across the lake to the mine and concentrator at Kimberly.

Cables will be three 1¼ in. galvanized steel with unwelded strands. Three towers on the west side will be 80 ft high and 80 ft apart on a 1,200 ft bluff. On the east shore there will be a single 330-ft tower near lake level. Minimum clearance over the like is to be 120 ft.

Cost of the crossing is expected to be $400,000 and for the entire 87-mile expansion about $3-million. Construction will be started this year and is expected to be completed in 1952.

ROBERT R. ROSE, JR, Mayor of Caspar, Wyo., who has been nominated Assistant Secretary of the Dept of Interior

Los Angeles W&P Sets Record of 4 Billion Kwhr

Los Angeles Department of Water & Power generated more than four billion kwhr during the 12-month period ending in April to set a high mark in its history. William S. Peterson, assistant chief electrical engineer, reported to the board of water and power commissioners that 4,023,680,994 kw hr generated during the period demonstrated that the city's load has increased three times faster than the population.

From Oct., 1941 through April, 1951, the city's electric load in kwhr for a 12-month period more than doubled, while in the same period the population increased one-third.

•

Darby Named to PSC

J. C. Darby of Winnsboro has been named chairman of the South Carolina State Public Service Commission, effective July 1. He succeeds Charles A. Rice of Greenville. B. F. Hines of Hartsville was elected vice chairman. The commission rotates the chairmanship at one-year intervals.

•

25-Year Franchise Voted

Public Service Co of Oklahoma's electric franchise with Okmulgee was renewed for 25 years by a vote of 2,259 to 1,171 in a special election.

Thomas Heads Revised Arizona Power Agency

Arizona Power Authority, state agency for distribution of Colorado River power, has been reorganized under Gov. Howard Pyle.

E. A. Thomas, Phoenix, is the new chairman. President of Arizona Wholesale Supply Co, he replaces M. J. Dougherty, father of the power authority act and head of the agency since 1944.

Thomas has been associated with the electrical industry since 1919 and been in business in Phoenix since 1925. He is president of the Arizona Association of Appliance Dealers, and a member of the national board of governors for the association.

Thomas and John H. Zellweger, Florence, are new members of the board. Other members are James Haskins, Cottonwood, vice-chairman; Dr N. D. Houghton, Tucson, and Robert Fish, Phoenix.

The Power Authority handles state sale of power generated at Hoover, Parker, and Davis Dams on the Colorado River. It has nearly 400 miles of transmission lines within the state and sells to private and public utilities.

•

San Diego G&E Plans Plant at Carlsbad, Cal.

A $12-million steam plant of 75,000-kw capacity will be the first to be constructed on the San Diego Gas & Electric Co's recently acquired site near Carlsbad, Cal. It is expected to go into operation in 1954.

The Carlsbad site, 60 miles north of San Diego and close to the ocean, was purchased as the location for all future generating plant development by the company.

•

Plans Second Generator

Kansas Gas & Electric Co has authorized a second generating unit for Murray Gill Station, now under construction near Wichita, which will more than double the plant capacity. The second unit will have a capacity of 70,000 kw. The first unit now being installed has a capacity of 45,000 kw. Total plant capacity of 115,000 kw will make Murray Gill the largest plant on the system. The first unit is scheduled to go on the line in April 1952, the second in October 1953.

Accuracy...

ONE IMPORTANT REASON WHY
KYLE RECLOSERS OUTSELL ALL OTHERS

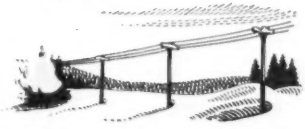
Accurate because they're built that way. Because we make so many reclosers, we have excellent machining facilities, extremely high quality standards and close tolerances, and extensive engineering and field experience. Each recloser is individually tested. The result is a very uniform product that assures accurate coordination.

Precise Hydraulic Mechanism: Does not depend on gravity; no clock-work, coil springs, or mechanical moving parts. A very consistent and accurate timing sequence is maintained. Kyle Reclosers are now supplied with ORTO®, L-M's oxidation-resistant transformer oil, inhibited for longer oil life.

Greater Convenience: You can change coils and timing sequence right in the field—in a few minutes. No shop trips to change ratings or sequences—it's easier to maintain coordination!

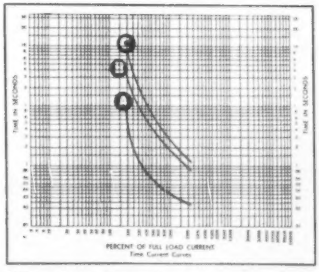
Here's the Kyle type H single-phase recloser. Has all the Kyle safety features. For 2.4 to 15 kv; six ratings from 5 to 50 amps; trip currents 10 to 100 amps; interrupting capacities from 150 to 1200 amps.

Also available in Kyle type 3H three-phase recloser, which recloses and resets individually on each phase to clear temporary faults; but if fault does not clear after three operations, it locks out *all three phases simultaneously* on the fourth tripout.



Satisfactory at wide range of temperatures. The design of the recloser makes it dependable at all temperatures—from 120° above to 20° below, says one user. Another large user, in Canada, says Kyles give complete satisfaction down to 58° below zero.

Installing a Kyle type H on a rural line in the West. Thousands and thousands of Kyle reclosers are in use all over the world.



Wider Choice **of operating curves and sequences. Kyle type H is the only recloser that offers three time-current curves—(A) fast, (B) retarded, (C) extra retarded. You can mix or match 'em almost any way you like—seven possible combinations.**

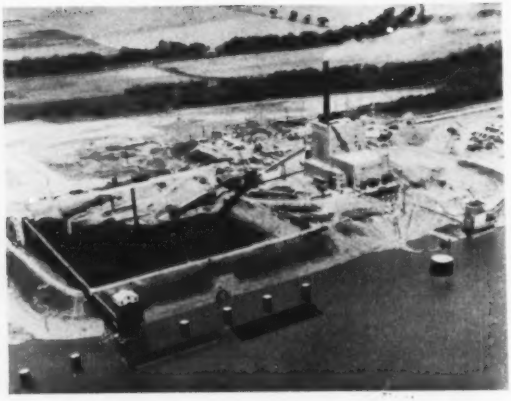
Ask the L-M Field Engineer what others are doing with Kyles. And ask him for a copy of our recloser bulletin. Or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

LM

LINE MATERIAL
Kyle Reclosers

Complete Coordinated Equipment for Distribution Today

43

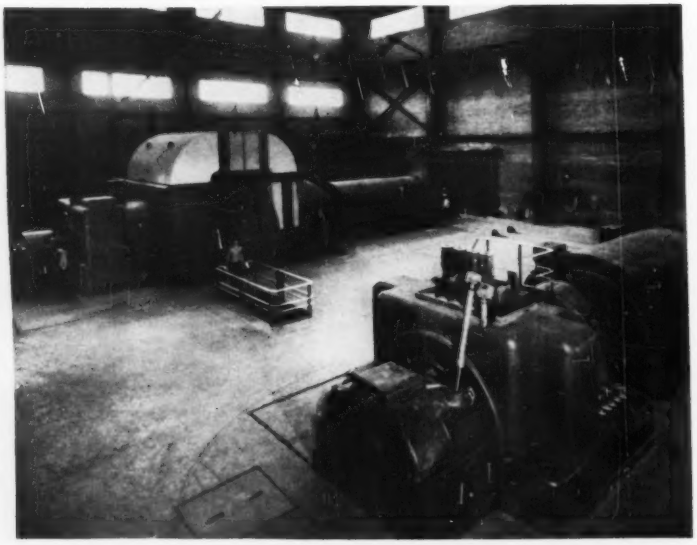


I&M PLANT near Lawrenceburg, Ind., puts 150,000 kw on line

BUSES CARTED 600 civic leaders from Ind

Sporn Dedicates Tanners Creek to Indiana, to the World

To produce power for the Midwest—
the purpose of Tanners Creek, new Ohio
Electric Co near Lawrenceburg, Ind. W
Sporn, president of I&M and its parent,
further significance in its completion.
promise of electric power to lift the soci
"The present lot of the people," he con
human beings are used in some countr
disadvantage, compared with this nation



HIGH PRESSURE turbine, right, and low pressure turbine, left, produce 150,000 kw

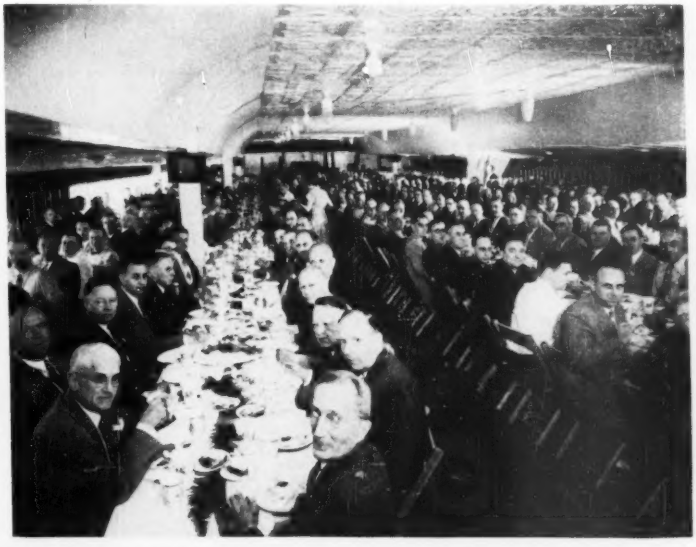
EXCURSION BOAT "Avalon" steamed dow

na and Michigan to ceremony at the plant

PLANT MANAGER E. E. Clapper, Gov. Schricker, and Sporn look over control room panel

0,000 kw now; 600,000 ultimately—is River steam plant of Indiana & Michigan n he dedicated the plant recently. Philip nerican Gas & Electric Co, said he saw a The plant, he said, partially fulfills the economic status of peoples everywhere. nented, "cannot be improved so long as s as energy producers at a 1,000 to 1 workers. Our own productivity must be stepped up to facilitate mechanization of the world." For the ceremony, 600 guests boarded the Avalon, an old stern-wheeler, to watch Indiana's Gov Schricker unveil a plaque. Idea was all right, he commented, except he didn't like leaving the state to do it. The river, by law, is part of Kentucky. In a more serious vein, the Governor told the gathering he felt power plants like Tanners Creek were "milestones in the progress of a free people conducting the American way of life." He called the occasion a testimonial to the spirit of men who moved without dictation or any stimulus outside that offered by free enterprise to meet the needs of his state and surrounding areas. "There will be no power shortage in the Midwest," he commented.

from Cincinnati to provide dedication site



MAIN SALON of old river boat became a dining hall for hundreds who attended event

Facts from NEW HAMPSHIRE

"8 Outages a month cut to zero with 'CSP®' Transformer"

"Until three years ago, we were having considerable transformer trouble due to lightning. 'CSP' Transformers proved to be our solution," reports a New Hampshire Utility.

"One particularly troublesome 2,400-volt conventional transformer required re-fusing about twice a week during the lightning season. One time the lightning arresters were actually blown up. We installed a 'CSP' Transformer and no outages have been experienced since."

Installation and maintenance costs for "CSP" (Completely Self-Protecting) Transformers are always lower, because complete protective equipment is built in, not separately mounted. A two-year survey of Electric Light and Power Companies shows the following:

NATIONAL AVERAGES

	"CSP"	Conventional
Installation Costs	$13.87	$24.74
Burn-out Rate	0.257%	1.005%
Fuse Outages	None	5.64% (at $6.52 per outage)
Load Checks	Automatic	12.8%
Breaker Reset	1.02%	None

If you'd like to check your own costs against these national averages, ask your Westinghouse representative for Booklet B-4247-B, "Transformer Costs and Their Relation to Profits". Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-70594-A

YOU CAN BE SURE... IF IT'S Westinghouse

"CSP" DISTRIBUTION TRANSFORMERS

Energy Sales in January 16.3% Over Year Before

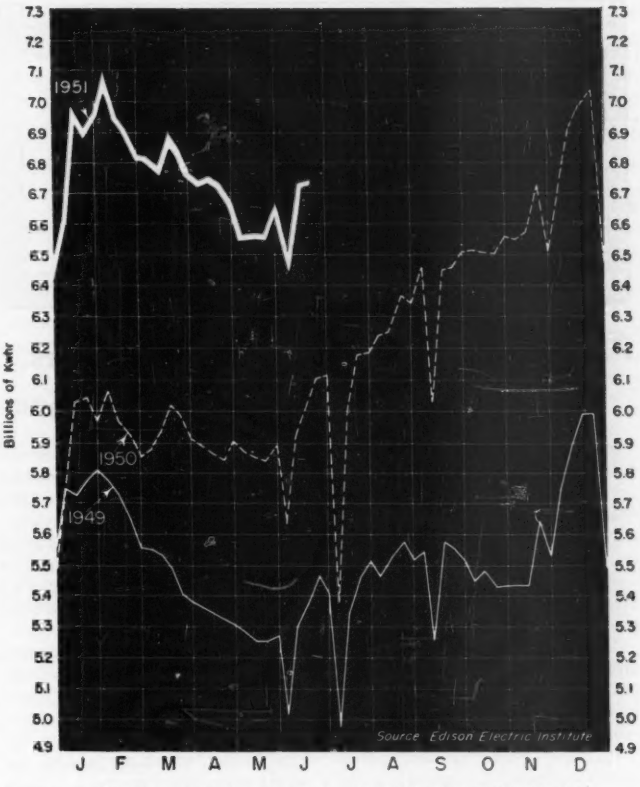
Sales of electrical energy in January exceeded those for the same month a year ago by 16.3%.

Electric utilities sold 26,689,735,000 kwhr to ultimate customers in January of this year compared to 22,943,238,000 kwhr in January, 1950. Revenue from ultimate customers totaled $474,794,000, or 11.6% more than the $425,325,400 received in January of the preceding year.

Average usage per residential or domestic customer reached 1,847 kwhr in the 12 months ended Jan. 31, 1951. This represents a rise of 8.6% over the average use of 1,700 kwhr for the same period a year before. The average annual bill amounted to $53.01, or 6% above the average bill for the twelve months ended Jan. 31, 1950 which totaled $50. Revenue per kwhr declined 2.4% from 2.94¢ to 2.87¢.

CLASSIFICATION OF SALES, JANUARY

Kilowatthour Sales January	Million Kwhr 1951	1950	Percent Change
Residential or domestic	7,189	6,276	+14.5
Rural (distinct rural rates)	473	409	+15.6
Commercial or industrial			
Small light and power	4,733	4,181	+13.2
Large light and power	12,694	10,602	+19.7
Street and highway lighting	319	287	+11.0
Other public authorities	664	602	−10.2
Railways and railroads			
Street and interurban railways	350	321	+ 9.0
Electrified steam railroads	224	215	+ 4.2
Interdepartmental	44	49	−10.4
Tot. to ultimate customers	26,690	22,943	+16.3



Output Week Ended June 16—6,746,691,000 Kwhr

Weekly Output, Millions Kwhr

1951	1950	1949
June 16 6,747	June 17 6,012	June 18 5,373
June 9 6,734	June 10 5,921	June 11 5,300
June 2 6,445	June 3 5,632	June 4 5,018
May 26 6,653	May 27 5,894	May 28 5,270
May 19 6,559	May 20 5,845	May 21 5,255
May 12 6,567	May 13 5,864	May 14 5,527
May 5 6,560	May 6 5,868	May 7 5,284
Apr 28 6,674	Apr 29 5,902	Apr 30 5,304
Apr 21 6,730	Apr 22 5,846	Apr 23 5,326
Apr 14 6,747	Apr 15 5,863	Apr 16 5,343

Percent Change from Previous Year

	June 16	June 9	June 2
New England	+12.7	+11.0	+10.3
Mid-Atlantic	+11.5	+12.6	+13.5
Central Industrial	+ 9.7	+11.3	+14.4
West Central	+ 8.1	+12.5	+12.5
Southeast	+14.0	+15.4	+14.2
South Central	+14.3	+24.6	+22.8
Rocky Mountain	+15.9	+14.9	+13.7
Pacific Coast	+15.1	+13.5	+14.0
Total United States	+12.2	+13.7	+14.4

Franchise Renewed

Citizens of Muskogee, Okla., voted 16 to 1 to renew the electric franchise of Oklahoma Gas & Electric Co for 25 years.

MEETINGS

Michigan Electric Light Association
Annual Convention, Mackinac Island, Mich., June 24-27.

American Institute of Electrical Engineers
Summer General Meeting, Royal York Hotel, Toronto, Canada, June 25-29; Pacific General Meeting, Multnomah Hotel, Portland, Ore., August 20-23; Fall General Meeting, Hotel Cleveland, Cleveland, Ohio, October 22-26.

Pacific Electronic Exhibit
Civic Auditorium, San Francisco, August 22-24.

Illuminating Engineering Society
National Technical Conference, Hotel Shoreham, Washington, D. C., August 27-30.

Northern California Electrical Bureau
Annual Exposition, Civic Auditorium, San Francisco, September 1-9.

Rocky Mountain Electrical League
Fall Convention, La Fonda Hotel, Santa Fe, N. M., September 9-12.

Public Information Program
Annual Workshop Conference, Edgewater Beach Hotel, Chicago, September 20-21.

American Society of Mechanical Engineers
Fall Meeting, Hotel Radisson, Minneapolis, Minn., September 25-28.

Iowa Utilities Association
Management Conference, Fort Des Moines Hotel, Des Moines, Iowa, October 1-2.

International Association of Electrical Inspectors
Eastern Section, Chalfonte-Haddon Hall, Atlantic City, N. J., October 1-3.

National Farm Electrification Conference
Annual Meeting, Hotel Gibson, Cincinnati, October 9-10.

Indiana Electric Association
Annual Convention, French Lick Springs Hotel, French Lick, Ind., October 10-12.

International Association of Electrical Leagues
Annual Conference, Roosevelt Hotel, New Orleans, October 10-13.

National Association of Railroad and Utilities Commissioners
Francis Marion Hotel, Charleston, S. C., October 16-19.

★**Pennsylvania Electric Association**
Joint Relay-Communications Committee Meeting, Emerson Hotel, Baltimore, Md., October 18-19.

National Electronics Conference
Annual Conference, Edgewater Beach Hotel, Chicago, October 22-24.

American Standards Association
Annual Meeting, Waldorf-Astoria, New York, October 22-24.

★Addition this week.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE									
1951									
June 14	**2.95**	**3.00**	**3.14**	**4.05**	**4.26**	**4.64**	**5.66**	**6.34**	**7.21**
June 7	2.91	2.95	3.09	4.03	4.25	4.62	5.63	6.33	7.23
END OF QTR.									
1st 1951	2.87	2.93	3.00	3.96	4.19	4.52	5.47	6.20	7.13
4th 1950	2.65	2.67	2.78	3.86	4.14	4.51	5.80	6.54	7.44
3rd 1950	2.66	2.67	2.76	3.81	4.08	4.46	5.70	6.54	7.25
2nd 1950	2.68	2.66	2.74	3.79	4.03	4.38	5.38	6.51	7.50

Data, Reis & Chandler, Inc.

Pacific Power & Light Co Negotiates $13.5 Million Loan for Yale Project

As the initial step in financing its $26,450,000 Yale Hydroelectric Project on Lewis River in southwestern Washington, Pacific Power & Light Co has negotiated a $13.5 million loan on 10-year unsecured bank notes. Guaranty Trust Co, New York, and other banks are making the loan at an interest rate of 3½%.

The balance needed to complete the project will be obtained through sale of common stock and bonds, Paul B. McKee, PP&L president, announced in a letter to stockholders.

President McKee explained that the short-term financing program is geared to the defense plant status of the project, which is scheduled to be rushed to completion in time to help carry defense demands during the winter of 1952-53. One great advantage to be gained through the project is that its largest output will come during the winter months, when the stream flow at the big federal plants on the Columbia is at its lowest point, he said.

The 100,000 kw generated at Yale will double the output of PP&L's Lewis River production. The new dam will be immediately upstream from the company's 100,000-kw Merwin Plant. Operation of the two plants will be coordinated.

Preliminary work at the project site has been under way for several weeks, with Morrison-Knudsen Co, Inc, Boice, Idaho, erecting necessary buildings and clearing land.

Design and supervision of the project are under direction of Ebasco Services, Inc, New York. The dam, of rock-fill design, will rise 300 ft above the river bed. More than 3 million cu ft of rock will be blasted off the top of a nearby hill to be dumped into the river for construction of the dam, which will be 1,500 ft long at the crest and 1,200 ft thick at the base. Layers of impervious material will be used to prevent seepage. The concrete spillway will have a discharge capacity of 173,000 cu ft per second.

Plans call for an initial installation of two 50,000-kw generators, matching installation at the Merwin Plant. Future development of reservoir sites on the Lewis River upstream from the Yale Project, will make possible the adding of two more generators at each of the power plants.

•

SEC Appointee Sworn In

Robert I. Millonzi, Buffalo, N. Y., attorney, was sworn in June 21 as a member of the Securities and Exchange Commission. Nominated for the post by President Truman in May, he was confirmed by the Senate June 13.

3 1/3% Excise Is Removed by House Tax Committee

First step toward removing one tax-collecting headache of the electric power companies—the 3⅓% excise—has been taken by the House Ways and Means Committee.

In closed session, the tax-writing group changed its mind about requiring publicly-owned electric utilities to collect the excise tax on sale of electric power. Then it voted to repeal the excise tax now collected by private companies.

House approval is certain, since revenue bills are seldom open to amendment on the House floor. There is still a question mark as to the Senate's view on removal of this tax.

The National Association of Electric Companies had called for elimination of the tax, or its extension to sales by public concerns.

Excise repeal, if it sticks, might head off requests for rate increases being considered by some utilities.

Major problem posed by the excise tax is the requirement to distinguish between industrial users, which are exempt from the tax, and commercial users, which are not.

Committee staff members said the tax this fiscal year will produce about $104 million in revenue.

FINANCIAL BRIEFS

Seattle City Council has determined that schools in the area outside the city but within the area served by facilities acquired by City Light from Puget Sound Power & Light Co shall get the same electric rate given Seattle schools. All schools will pay a flat rate of $1.425¢ per kwhr.

Electric Utility Financing—June 9-16

Company	Description	Amount of Offering (000)	Offering Price	Yield at Price to Public
Bonds				
Public Service of New Hampshire	1st mtg "F" 3¼%, 1981 new money	$3,000	102.738%	3.60%
California-Oregon Power	1st mtg 3⅝%, 1981 new money	6,000	102.31	3.50
Common Stock				
General Public Utilities	504,657 sh new money	8,327	$16.50	7.27
Public Service of Colorado	249,116 sh new money	5,667	22.75	6.15
Kansas Power & Light	256,842 sh new money	4,109	16.00	7.00

SCHEDULED FOR FOLLOWING WEEK

Bonds—Missouri Power & Light, 1st mtg, 1981 new money, $4 million; Texas Electric Service, 1st mtg, 1981 new money, $11.5 million.

IN THE INDUSTRY

FISCHER BLACK

There was much consternation and dismay among utility leaders over the speech delivered by Edwin G. Nourse before the Edison Electric Institute Convention in Denver. Past statements by Nourse had indicated that he could be classed as a straight thinker at least in the field of economics. But from some of his assertions with regard to the electric power field he missed this mark by quite a wide margin.

Specifically Nourse doubts that the utilities are willing to recognize that hydroelectric developments must be tied in with navigation, agriculture, forestry, and other "socially necessary" items. He says, "If the federal government had not become a pace-maker in that situation (TVA), I do not believe the power industry's contribution to the industrial quickening of a somewhat lagging section would have been so adequate or so prompt as it has in fact become." Then enjoying his little excursion into a field where he shows little knowledge, Nourse shows his gullibility by saying, "To my mind, TVA is an invaluable experiment in the laboratory of free enterprise. We should not regard it as a 'pilot plant' which has shown us just how to do something, which we can now repeat in numbers. It has shown us certain mistakes which should not be made again elsewhere by anyone, public or private."

Who Made A Mistake?

It appears that Nourse referred to the "mistake" of not coordinating hydroelectric developments with transportation, soil conservation, forest development, and wild life protection. Of course, here again, he shows little personal knowledge of the actual relationship between these fields and that of power development. He did not and of course he could not have quoted a single case where a utility had refused to consider any one of these items. His comments are of the same vague nature as those which credit TVA with more than it rightfully deserves. No one doubts that from an engineering point of view TVA has built a good system but anyone who is informed knows that flood control, navigation, soil conservation, and economic improvements are not anywhere near what they are cracked up to be.

The important lesson for the utilities to learn from this speech by Nourse is that they have not been doing enough talking about the job they have been doing to develop their territories. It should be remembered in this connection that the Opinion Research Study showed that 84% of those interviewed said they knew of nothing special that the electric company had done for the community. Here is a job for the Rural & Urban Development Committee of the EEI as well as for each individual company.

Senator Willis Smith Knows

It is worthy of note that our elected representatives in Washington are getting a better understanding of the problem. Senator Willis Smith of North Carolina seems to have penetrated the shadows that have surrounded many others. In dedicating the new Carolina Power & Light Co plant in Goldsboro, N. C., he says, "We must remember that a super-intelligent government did not discover the process of producing electricity. Nor did any government sell it to the public, thereby enriching the lives of all of us. No bureaucrat caused the first power plant to be built. That was left to far-sighted and free Americans, working within the framework of an unfettered economy, risking the hazards to raise the money and to sink or swim with their own ideals and aspirations."

TECHNICAL NOTES

ARCHER E. KNOWLTON

Polonium ionizes adjoining air and is effective in discharging static in hazardous laboratory operations.

Free piston operation has been achieved with stability despite absence of connecting rod and crankshaft linkages in a compressor-generator for a gas turbine.

Maintenance personnel can be minimized if the goal in power plant operation is a greater than 20% ratio of overtime to straight time maintenance payroll.

Polarized plastic sheets can be applied to goggle lenses so that transmitted light can be regulated by rotating one of the sheets.

Rubberized insulators (non-attractive to hunters and slingshooters) have given 9 years' durability on railroads.

Pole purchase for utilities in 1950 ran 72.5% SYP, 9.4% fir, 6.7% WRC, 6.6 lodgepole pine.

Hermetic sealing of electronic plug-in components for industrial control would be welcomed if initial cost could be kept down.

Transformer of 2,000,000-kva rating would result if the 300,000,000-volt betatron of University of Illinois were altered to be an oil-cooled power transformer.

Tubes for "loading" (along with the splices) are going submarine in a 115-mile telephone cable from Key West to Havana.

Sickness relief operators are proving a more expensive way of operating a power plant than paying the hale and willing operators overtime to stay on.

Circuit breaker and other hazardous tests can be observed safely and on a "close-up" basis if television is provided.

Reliable, heavy-duty controls should be provided for the industrial equipment increasingly used to enhance the horse-power per worker.

Rural voltage is being controlled by single-step regulators actuated only by minimum and maximum voltage limits.

Transformer overload capability is not necessarily increased by use of an inhibited oil; freedom from oil maintenance should be enhanced.

NEWS ABOUT PEOPLE

Lynn Gas & Electric Co Makes E. W. Allen VP

Ernest W. Allen, merchandising manager of Lynn (Mass.) Gas & Electric Co, has been elected a vice president of the company.

E. W. ALLEN

Joining the utility after completing his education, Allen has held administrative, public relations, and merchandising positions. He served as a member of the Massachusetts legislature for six years.

•

William A. Whittlesey has been appointed western division manager of Western Massachusetts Electric Co, Pittsfield. He succeeds **Charles S. Van Buskirk** who has retired. Whittlesey joined the company in 1934 as lighting engineer. He became assistant sales manager in 1945 and assistant manager of the western division in 1946. Van Buskirk joined the Pittsfield Electric Co in 1920 as a construction engineer and has been western division manager since 1944. **Raymond W. Flynn** replaces Whittlesey as assistant manager of the division.

G. H. Campbell has been named manager of General Electric Co's Newark office succeeding **A. W. Lunn** who has retired. Campbell, who has been in charge of the Newark Central Station Division, joined GE in 1924 and became a sales engineer in 1926. He was transferred to Newark in 1947. Lunn is a veteran of more than 40 years of service with GE. For the past 29 years he has been manager of the company's Newark office.

Nelson H. Randall has been appointed advertising manager of Toledo Edison Co. He has been a member of the company's public relations staff since 1946. He first joined the utility in 1929 after working as a reporter. Two years later he returned to newspaper work. In 1938 he rejoined Toledo Edison and became plant protection supervisor.

•

New Orleans PS Elects Dinwiddie President

(*See Front Cover*)

George S. Dinwiddie, vice president, has been elected president of New Orleans Public Service, Inc. He succeeds A. B. Patterson.

Dinwiddie joined Public Service in 1936 as tax and research clerk. He later served as executive office assistant, budget director, head of the budget and statistical department, and economist. He was named vice president in 1949.

Patterson has been with the utility since 1920 beginning as an advisory engineer. He became vice president and general manager in 1922 when the company was reorganized, and was elected president in 1930.

•

Robert W. Suman, chief engineer for power transmission products since 1946 for Link-Belt Co, has been made chief engineer of the company's Philadelphia plant. He replaces **William S. Campbell** who has retired. Suman has been connected with Link-Belt since 1934.

Robert W. Coddington has been appointed Upper Columbia district manager for Bonneville Power Administration. He has been acting manager for a year. Previously he was district engineer for BPA.

J. H. Ward Elected VP by Commonwealth Edison

J. Harris Ward, secretary of Commonwealth Edison Co, Chicago, has been elected a vice president of the

J. H. WARD

company. Ward, who joined Edison in 1938, has been secretary since 1948 and will continue to hold this position.

During World War II he served on the War Production Board in various capacities and subsequently in the Army as a major in Strategic Bombing Intelligence, European Theatre.

•

Frank P. Anderson has been appointed secretary of the Hydraulic Institute, the Compressed Air & Gas Institute, the Heat Exchange Institute, and the Diamond Core Drill Manufacturers Association. He formerly was associated with the National Electrical Manufacturers Association for 14 years. Most recently he has served NEMA's land steam and gas turbine, marine turbine, hydraulic turbine, and switchgear sections.

Raymond W. Andrews, merchandising manager of the radio tube and television picture tube divisions of Sylvania Electric Products, Inc, has been appointed manager of factory sales. He has been with Sylvania since 1945. The company has named **William T.**

(*Continued on page* 27)

Our Customers were right

the Performance of ELEMEX Capacitors Proves it!

When L-M engineers started designing capacitors, about ten years ago, they worked closely with utility engineers to learn what customers needed in capacitor design and performance. ELEMEX capacitors were *designed* to meet customers' needs. Now ELEMEX capacitors have been improved to serve those needs even better. Here are some of the features—some of the "extras" that ELEMEX capacitors give you!

1. Longer Life: low insulation unit stress on the pack—the heart of the capacitor.

2. Stronger solder-sealed bushings. It takes about 1900 pounds to force an L-M bushing out of the cover. Bushings are tested 100%—*every* bushing!

3. Pure aluminum electrodes—not just tinned copper.

4. Easy installation—with uniform terminal height above mounting flanges; "Paragroove" connectors simplify hookup.

5. Low-cost maintenance: L-M introduced stainless steel tanks, will continue to produce them as long as possible. Mild steel tanks have *three* coats of enamel *baked on* individually, not just one or two spray coats.

6. Streamlined tanks, with rounded corners for appearance and maximum resistance to corrosion. (Important in painted mild steel units).

7. Convenient packaging, in wood-reinforced cartons with protection at friction points. Cartons stamped sides and top; unit remains in the carton from finishing bench to the pole.

8. Simple, efficient switching for small or large capacitor banks. Another L-M extra.

Want to Cut Line Losses?

Worn capacitors may stay on the job! Ask the L-M Field Engineer for the whole story. Or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

LM

LINE MATERIAL

Capacitors

Complete Coordinated Equipment for Distribution Today

All control elements are individually pre-tested before assembly. Here a composite test of the assembled control panel is being made. A final check of the operation of the completely assembled regulator assures proper co-ordination of all components.

NOW— CLASS 1 ACCURACY

ASA Standard C57.15-1949 defines three classes of accuracy for controls:

Class 1: not over ± 1% over-all error (99% accurate)

Class 2: not over ± 2% over-all error

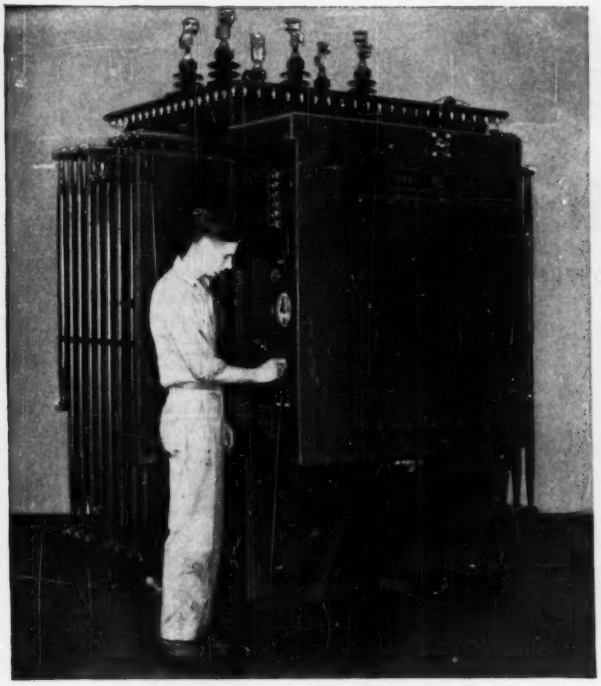
Class 5: not over ± 5% over-all error

This Standard recognizes errors arising from changes in temperature, frequency, ratio, regulator position, and load and their combined effects on the accuracy of:

1. Potential supply
2. Voltage regulating relay and associated ballast
3. Current transformers
4. Line drop compensator—resistance and reactance elements.

The maximum plus error and the maximum minus error must be determined in accordance with ASA Test Code C57.25. The largest total error, *either plus or minus*, determines the accuracy class of the regulator control.

The assembly of the voltage regulating relay, the "brain" of the regulator, requires skilled craftsmanship.



General Electric's three-phase 32-step Type MLT regulators are available in standard ratings for circuits up to 25,000 kva and 69,000 volts.

General Electric's Type IRS induction voltage regulators provide the finest regulation obtainable for heavily loaded, urban feeders.

IN G-E REGULATORS —AT NO EXTRA COST

This means better utilization of your feeders because they can now carry heavier loads for greater distances.

With ASA Class 1 accuracy controls on your regulators, more drop can be allowed in a regulated feeder without *at any time* exceeding established voltage limits.

These highly accurate controls meet ASA Standards for Class I devices, which call for at least 99% accuracy regardless of operating changes in temperature, frequency or load. And—they're now *standard equipment* on all General Electric station-type feeder voltage regulators. This includes induction-types IRS and IRT, as well as the step-type MLT 32.

This important new development stems from several years of research and engineering. Laboratory techniques have been adapted to factory procedures. The production of these controls demands the same brand of "know-how" that has made General Electric the leader in the field of voltage regulation for over fifty years.

For further information on how Class 1 accuracy can increase feeder capacity for you, see your G-E representative. *General Electric Co., Schenectady, N. Y.*

404-75

GENERAL ELECTRIC

C-E REHEAT BOILERS

HENNEPIN STATION

ILLINOIS POWER COMPANY

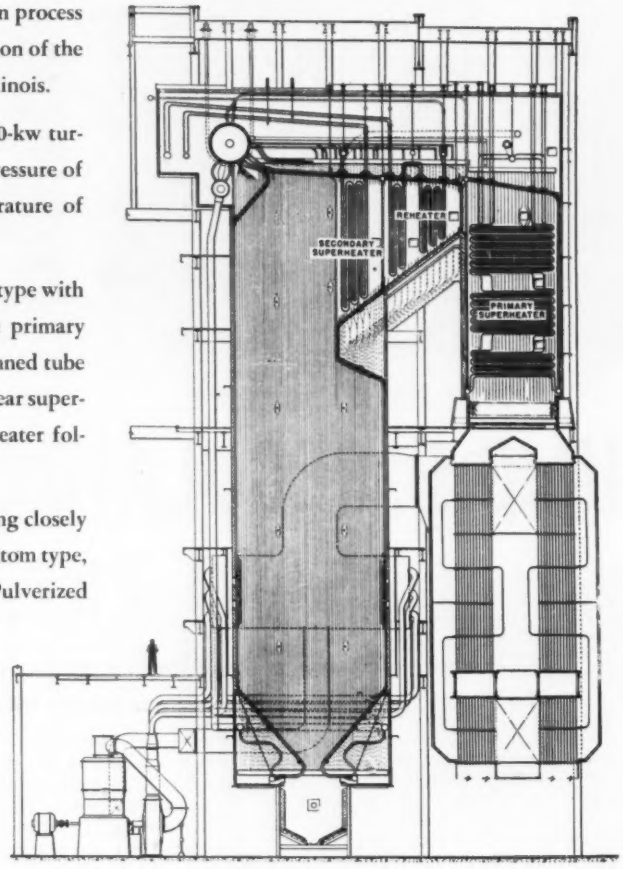
THE C-E Unit illustrated here is now in process of fabrication for the Hennepin Station of the Illinois Power Company at La Salle, Illinois.

The unit is designed to serve a 75,000-kw turbine-generator operating at a throttle pressure of 1450 psi with a primary steam temperature of 1000 F reheated to 1000 F.

This steam generator is of the radiant type with a reheater section located between the primary and secondary superheater surface. A finned tube economizer section is located below the rear superheater section, and a tubular type air heater follows the economizer.

The furnace is fully water cooled, using closely spaced plain tubes. It is of the basket-bottom type, discharging to a sluicing ash hopper. Pulverized coal firing is employed, using bowl mills and tilting tangential burners.

B-499



C-E

COMBUSTION ENGINEERING—SUPERHEATER, INC.

200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS

News About People

(*Continued from page 22*)

Buschmann merchandising coordinator for the radio tube and television tube divisions and **W. G. Blowers** merchandising supervisor of the television tube division.

John L. Ganz has retired as treasurer of Union Electric Co of Missouri. His duties as treasurer will be assumed by **E. J. Shapiro,** now secretary, who will have the title of secretary and treasurer. Ganz joined Union Electric in 1906 working in the motor and transformer division. He received a law degree in 1917 and was made the company's attorney. In 1931 he was elected treasurer.

•

Babcock & Wilcox Tube Makes Sawyer President

Babcock & Wilcox Tube Co has elected Luke E. Sawyer president.

L. E. SAWYER

The former executive vice president succeeds Alfred Iddles who has been named chairman of the board.

Sawyer became associated with Babcock & Wilcox Co, the parent firm, in 1910 and transferred to B&W Tube in 1919 to do development work. In the following years he served as assistant superintendent, plant engineer, and general superintendent. He was appointed a vice president in 1948 and became executive vice president shortly afterwards.

Joining the parent company in 1937, Iddles became vice president in 1945 and president three years later. He also was named president of B&W Tube in 1948.

Cotton Named President of Wisconsin Association

E. H. Cotton, vice president in charge of operation for Northern States Power Co, Wis., has been elected president of the Wisconsin Utilities Association. Elected by mail ballot, he was installed at a dinner held recently in Milwaukee. He succeeds Alfred Gruhl.

Theron Brown, vice president and

E. H. COTTON

general superintendent of Madison Gas & Electric Co, succeeds Cotton as vice president of the association.

Cotton, who had been vice president of the association, entered the utility business in 1919 as a cadet engineer of the St. Paul Gas Light Co. He served as assistant superintendent, then superintendent, of gas and electric stations. When the company was purchased by Northern States Power Co, Minn., in 1926, Cotton became superintendent of gas production. The following year he went to Northern States Power, Wis., as assistant general superintendent, and later became general superintendent and then vice president.

•

Robert B. Grove, vice president of Consolidated Edison Co of New York, has retired after 44 years of service with Con Ed and predecessor companies. He began his utility career with United Electric Light & Power Co in 1907 as a draftsman. He became secretary of United in 1928 and vice president soon after. Subsequently he was elected vice president of New York Edison Co and served in the same capacity with several other New York electric utilities. With the creation of the Con Ed system in 1936 Grove became vice president in charge of rates, legal matters, and commercial relations.

Daniel P. Lacock has joined Kuhlman Electric Co, Bay City, Mich., as assistant sales manager. Formerly he worked for Westinghouse Electric Corp in Atlanta as assistant to the central station manager.

William H. Lawson, vice president of Central Vermont Public Service Corp, has retired. He joined a predecessor company in 1899 as bookkeeper and collector. Later he became assistant manager and then general manager of Rutland Railway, Light & Power Co. He was elected vice president of Central Vermont in 1929.

Gilbert C. Nieburg has been appointed assistant general sales manager of Day-Brite Lighting, Inc, St. Louis. With the company for 11 years, he previously served as production department manager, manager of the customer service department, and field contact representative for the sales department.

J. Uhlman, district manager in Kent for Ohio Edison Co for 21 years, has resigned. New Kent district manager is **Allan Spotts,** formerly supervisor of customer accounting in the Akron office of Ohio Edison. Uhlman had been with the utility 43 years.

OBITUARY

Frank S. Schuyler, 66, retired district manager of Allis-Chalmers Manufacturing Co's Detroit district office, died June 10. With the company for 43 years, Schuyler had been manager of the Detroit district from 1920 until his retirement last year.

John L. Tudbury, 64, former vice president and general manager of Salem (Mass.) Electric Lighting Co, died at Salem June 15. He joined the utility in 1911. Previously he had worked for the Lynn (Mass.) Gas & Electric Co.

Gordon H. Simmons, 63, government engineer, died June 4 at Washington, D. C. As a representative of the Defense Department he modernized power plants in South Korea and Saudi Arabia.

MANUFACTURERS and MARKETS

STREET LIGHTS are tested inside a 75-ft chamber which acts as a camera and focuses light on test stand at far end where a General Electric Co engineer is adjusting a light intensity meter. Circular curtains keep light from being reflected in darkened chamber of GE's Illuminating Laboratory, Lynn, Mass.

Canadian Westinghouse Constructing 2 Buildings

Canadian Westinghouse Co, Ltd. will begin construction immediately of two new manufacturing buildings in Hamilton, Ont. They are part of the company's $10-million expansion program.

The new structures, providing 300,000 sq ft of floor space, will be used to make electrical apparatus and electronic equipment and supplies for the country's defense program.

The new plants will employ 1,300 workers. One will adjoin the appliance plant in the western part of the city and the other will be built on a 20-acre site on Beach Road.

The company also plans to erect new facilities at Montreal. It recently completed a plant at Three Rivers, Quebec, and an office building and service department at Edmonton, Alberta.

•

Selective Dispatching Method Developed by GE

An all-electronic selective dispatching method for two-way radio systems has been developed by General Electric Co's Commercial Equipment Division.

The method permits "private" conversations between a dispatcher and an individual mobile unit, or a specific group of mobile units within a two-way radio system. The new equipment allows separation of a system into as many as ten groups. All individuals in a group hear the dispatcher's call, but when the called party responds all other receivers in the group remain silent.

Under the new method a mobile operator would hear fewer calls not intended for him, reducing the number of callbacks and repeats, and lessening driver fatigue.

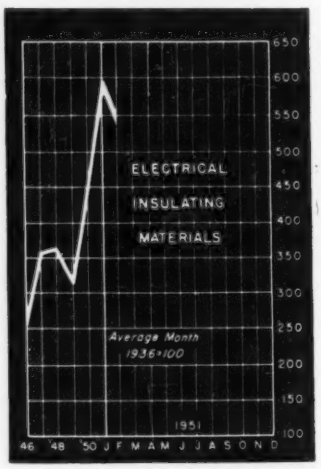
An electronic tone sensitive device, weighing 3 lbs, is attached to each receiver in the system. Each group of receivers is activated by a separate tone signal, all within the 300-3,000 cycle range, from the dispatcher's office.

•

Insulating Materials Sales Show Drop in February

Sales of electrical insulating materials decreased in February, falling 7% below those recorded during January.

The index of sales billed compiled by the National Electrical Manufacturers Association dropped to 552 in February compared with 595 in January. February sales, however, were 55% higher than those for February of last year when the index read 355.



MANUFACTURING BRIEFS

Production of primary aluminum in April totaled 135,402,337 lb, the Aluminum Association reports. This compares with 140,044,429 for March. The average daily production for April was 4.5 million lb, representing a slight increase of about 1% over the average daily production in the first quarter of 1951.

Benjamin Electric Co, Des Plaines, Ill., was joined by employees and their families and friends in a two-day celebration, June 4-5, of the company's golden anniversary. Nearly a thousand persons visited the Benjamin plant during the two days.

Bull Dog Electric Products Co has opened a second branch factory as the Urbana Division of Bull Dog Electric Products Co. The plant will make duct plugs for buses.

SALES ASSIGNMENTS

COMPANY STAFFS

Mathias Klein & Sons, Chicago, has appointed Bamford E. Rogers sales representative for the northeastern part of the country. His headquarters will be at Paterson, N. J.

A. O. Smith Corp has named John Fox representative of the company's Welding Products Division in the greater St. Louis area.

Line Material Co, Milwaukee, Wis., has appointed Brady Stoughton as lighting engineer for its South Atlantic Division. His office will be at Atlanta. In other changes the company transferred E. J. Kirsch from Springfield, Ill., to Zanesville where he will be assistant manager of transformer sales. He will be replaced at Springfield as field engineer by J. A. Schwenke.

REPRESENTATIVES

W. N. Matthews Corp, St. Louis, has named Robert J. Walker, 2206 Chatfield Drive, Cleveland, as its representative in Ohio.

Metal Prices
June 18, 1951

COPPER, Conn. Y., lb.	$ .24½
LEAD, N. Y., lb.	.17
ZINC, prime Western, E. St. Louis, lb.	.17½
TIN, Straits, qual. N. Y., lb.	1.06
ALUMINUM, ingot, base price	.19
NICKEL, base price	.56½
STEEL billets, Pitts., ton	56.00
STEEL, scrap, No. 1 heavy, Pitts., ton	45.00

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Alabama — Pioneer Electric Co-operative, Greenville, 100 mi. rural distr. lines and sys. imprvs., Butler Co., $580,000.

Arizona-Nevada—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Boulder City, Nev., three 196,000 volt insulated 200/400 to 5 ampere, single phase, outdoor-type current transformers; three 196,000 volt insulated, 138,000-69/115 volt-single-phase, wound type, double-secondary, outdoor-type potential transformers for the Hoover Switchyards, Boulder Canyon Proj. Inv. No. DS-3450.

Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., synchronous motors, exciters for Willow Creek Pumping Plant, Colorado-Big Thompson Proj., Spec. DS-3451. L. N. McClellan, ch. engr.

Conn., Middletown—The Hartford Electric Light Co., 266 Pearl St., Hartford, Zone 15, and The Connecticut Power Co., 31 Union St., New London, 65,000 kilowatt capacity, Power Plant, Laurel Section between River Rd. and Connecticut River. $10,000,000.

Mo., Linn—Three Rivers Electric Co-operative, Linn, plans by H. A. Casey, Holland Bldg., Springfield, warehouse, shop and service bldg. with offices, $140,-000.

Montana—Lincoln Electric Co-operative, Eureka, 28 mi. rural distr. lines, incl. two-way radio, Rexford, Lincoln Co. $125,-000. J. R. Pitman, Eureka, consult. engr.

N. M., Los Alamos—U. S. Atomic Energy Comn., Los Alamos, addnl. power and steam supply facilities, turbo-generator, boilers, fans, pumps, etc. $500,000-$650,000. Plans deposit $50. Black & Veatch, 4706 Broadway, Kansas City, Mo., archts.

N. Y., Hicksville—Long Island Lighting Co., 250 Old Country Rd., Mineola, power plant, facilities, Old Country Rd. and New Sound Rd. $4,000,000.

Oklahoma—Tri-County Electric Co-operative, Tooker, 1,304 mi. rural distr. line and sys. imprvs., Texas Co., $1,860,000.

South Dakota — Bureau Reclamation, Dpt. Interior, Billings, Mont., one 100 kva transformer, one 69,000 circuit breaker, two 115,000 volt and one 69,000 volt air switches, six 69,000 volt disconnecting switches, two 69,000 volt disconnecting fuses and two potential transformers for Armour sub station, Spec. 600S-59; one 100 kva transformer, 2 potential transformers for circuit breaker, 3 air switches, 6 disconnecting switches, 2 disconnecting fuses for Beresford substation, Spec. 600S-61; one 100 kva transformer, 2 potential transformers, 1 circuit breaker, 3 air switches, 6 disconnecting switches, 2 disconnecting fuses for Flandreau substation; Spec. 600S-62; one 100 kva transformers, 2 potential transformers, 1 circuit breaker, 3 air switches, 6 disconnecting switches, 2 disconnecting fuses for Groton substation, Spec. 600S-63; one 100 kva transformers, 2 potential transformers, 1 circuit breaker, 3 air switches, 6 disconnecting switches, 2 disconnecting fuses for Summit substation, Spec. 600S-64; one 100 kva transformer, 2 potential transformers, 1 circuit breaker, 3 air switches, 6 disconnecting fuses for Tyndall substation, Spec. 600S-65; 2 transformers, 1 step voltage regulator, 1 circuit breaker, 1 horn-gap switch, 3 disconnecting fuses, 9 disconnecting switches, 1 fuse cutout, 3 current and 3 potential transformers for Winner substation, Spec. 600S-66, Missouri River Basin project.

Tex., Greenville — City, voted bonds, electric power sys. $950,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs.

Washington—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Quincy, Wash., transformer, lightning arresters, switch, cutouts, for Babcock Pumping Plant Switchyard, Columbia Basin Proj., Spec. DS-3452. L. N. McClellan, ch. engr.

Wash., Spokane—U. S. Eng., City-county Airport, Walla Walla, Wash., ground control approach, instrument landing sys. and surveillance radar facilities, installing lighting equip., Fairchild Air Force Base, Eng. 45-164-51-13. Plans deposit $25.

Alta., Edmonton—Calgary Power Ltd., 140 First Ave. W., power sub-station east of here. $300,000.

Alta., Edmonton—W. J. MacFarland, city engr., City Hall, power plant addn. for Municipality, Edmonton, Alta. Plans deposit $25.

Low Bidders & Contracts Awarded

Ala., Birmingham—Daniel Constr. Co. of Alabama, 822 7 Ave. S., Birmingham, Ala. Contract Awarded. $519,000, plant an warehouse. Westinghouse Electric Corp., Comer Bldg., Birmingham, Ala.

Colo., Colorado Springs—Ring Constr. Co., 19 W. Cucharras St., Colorado Springs, Colo. Contract Awarded, $150,-756, power plant substructure and circulating water piping, City, City Hall, Colorado Springs, Colo. Bids May 29, awarded June 1.

Conn., Wallingford—W. J. Mengin, Inc., 51 Elm St., Naugatuck, Conn. Contract Awarded. $841,108, Contr. 12, power plant structures. Boro Electric Wks., Washington St., Wallingford, Conn. Bids May 22.

Ill., Tinley Park — Fries-Walters Co., 2001 W. Pershing Rd., Chicago 9, Ill. Low Bidder, $433,373, electric sub-station and underground distr. syst. at Tinley Park State Hospital. State Capitol, Springfield, Ill. Bids June 5.

Utah, Tooele—Tolboe & Harlin Constr. Co., Dooly Bldg., Salt Lake City, Utah. Contract Awarded. $533,238. Power plant extens. and rehabilitation and simulant laboratory in "D" area Dugway Proving Grounds. U. S. Eng., 74 New Montgomery St., San Francisco, Calif. Bids May 29.

Wis., Milwaukee—Ray J. Moths Corp., 600 S. First St., Milwaukee, Wis. Contract Awarded. $600,000. $60,000 sq. ft. warehouse. General Electric Supply Corp., 190 N. Broadway, Milwaukee, Wis. Awarded May 28.

Ont., Ottawa—The Robertson Constr. & Eng. Co., Ltd., Niagara Falls, Ont. Contract Awarded. Approx. $1,106,000, radio and electrical engineering laboratory, Montreal Rd. National Research Council, Sussex St., Ottawa, Ont. Bids June 6.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

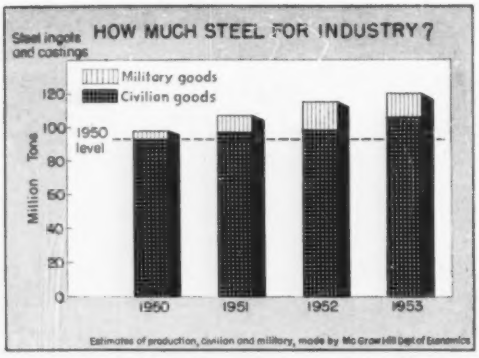
Kan., Topeka—Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O., truck and military tire production plant on 70 acres, $10,000,000. CD.

Mich., Flint—Buick Motor Div., General Motors, Flint, Zone 2, 1,600,000 sq. ft. plant, to mfg. Wright Sapphire jet aircraft engines, north of Flint, 2 story, 721x1,668 ft., steel, brick building with 2nd story, 275 ft. wide running 1,688 ft. length, admin. bldg. and power plant, Beecher Twp., Genesee Co. $15,000,000.

Utah, Salt Lake City—A. L. Mason & Assoc., Judge Bldg., 22 story office and apartment, S. Temple and 1st Ave. $8,000,000.

Wash., Seattle—Sound View Hospital Corp., c/o E. H. Savage, 4424 California Ave., Seattle, hospital. $4,650,000.

Electrical Business Outlook



STEEL PRODUCTION will increase enough within the next year to meet higher military requirements set by the mobilizers

Metal Situation: Better or Worse?

The materials shortage really hit utilities last week, when the industry found its third quarter program cut by 30%. The situation in steel, copper, and aluminum is now acute. Will it get any worse?

The answer is probably not. The scramble for key metals may be as hectic right now as it is ever going to be. In some cases, production is increasing rapidly. In others, better controls over non-essential uses will ease the strain. And in the essential industries, metal requirements are rapidly nearing their peak.

Here are some rough figures on what's happening to the supply of steel, copper, and aluminum:

Steel

The most important fact about steel is that production is increasing—fast. A year ago the annual rate of output was 98 million ingot tons. Now it's 108 million tons, with 115 million tons projected for the middle of 1952 and 120 million for 1953.

A year ago, production of finished steel—plates, shapes bars, etc—was only 74 million tons. It's close to 80 million tons a year now, and is headed for 83 million tons or more by mid-1952.

These figures indicate that within a year, steel will be getting easier. Here's why:

1. An increase of 4 or 5 million tons in finished steel production will about handle the increase in strictly military demand for steel over the next year, if the Pentagon sticks to its present program.

2. Steel requirements for "defense-supporting" capital goods will evidently drop a little by mid-1952. These programs, plus higher military requirements, are scheduled to take 30% to 40% of the steel supply at the peak of the defense program, early next year. There's 40% on DO order now.

3. A great deal of steel is now going into inventories. This is "build-up" steel—the stocks which new defense plants must accumulate before they start production. Now and in the next few months, this inventory demand may be as great as the amount actually needed for military production. But it is partly temporary.

Thus the really frantic scramble for steel may not last very long. For the next few months, military requirements will be rising rapidly. The needs of defense supporting industries will be at a peak. And steel inventories will still be increasing, since CMP will not be fully effective. But within a year, these things will change. By that time, there may be more steel for non-defense use than in 1950.

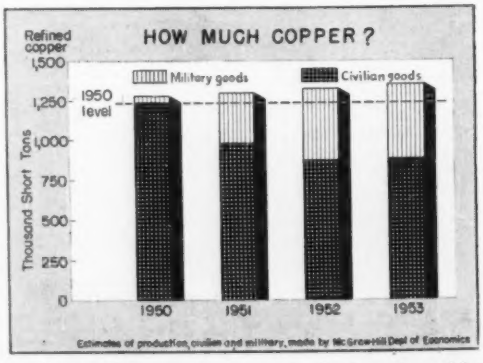
Copper and Aluminum

Copper—like steel—is needed more for capital goods than for strictly military items. Peak requirements, for military and defense-supporting items combined, may not run over 60% of the total domestic copper supply. And DO orders, reflecting the heavy capital goods demand, are running 55% to 60% now. A year from now, lower requirements for capital goods and for inventory will offset the rise in military demand.

In aluminum, plans call for 1.3 million tons of capacity by the end of 1952, compared with 800 thousand tons now. It's not clear just how quickly this new capacity is going to come in. But the extra 500 thousand tons is probably more than the additional amount which will be needed for military products. As defense-supporting requirements drop off, other consumers may be better supplied after mid-1952.

Once again, this shows up in the pattern of DO orders. For the third quarter, they amount to over 70% of the available aluminum. And this figure equals or exceeds most estimates of the maximum defense take expected early next year.

Metals will still be tight in 1952, as the charts show. But the worst may be over before many months.



DEFENSE NEEDS will cut copper supply. But lower demand for inventory and capital goods may offset this to some extent

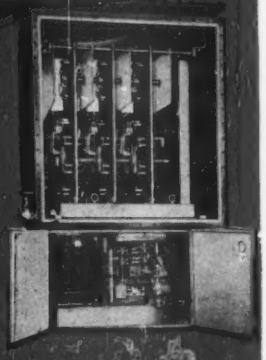
MOLONEY VOLTAGE REGULATING APPARATUS . . .
. . . THE ANSWER TO
YOUR REGULATION PROBLEMS!

Moloney Step-Type Feeder Voltage Regulators, Regulating Transformers and Load Ratio Control Transformers have been chosen by many system engineers to solve their regulation problems after considering the following advantages of Moloney Load Tap Changer with which they are equipped.

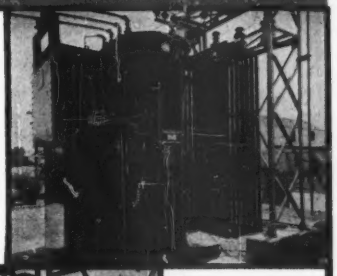
1. RELIABILITY . . . The tap selector switch is mechanically driven by Geneva gears to assure correct positioning. Arcing is prevented on this switch since the load transfer switch assumes the entire load before the selector switch contacts are opened and maintains this load till after the selector switch contacts close in the next tap position. The load transfer switch, which is the only switch required to transfer load current, is provided with accelerating springs and is driven by Geneva gears. This assures quick break of the current arc.

2. LOW MAINTENANCE COST . . . Contacts which transfer load current are accessible for inspection and maintenance through an access opening in the Load Tap Changer compartment cover. Arcing duty is imposed on only four stationary contact tips per phase as contrasted with eighteen in mechanisms performing both tap selection and load shifting duties on the same contacts.

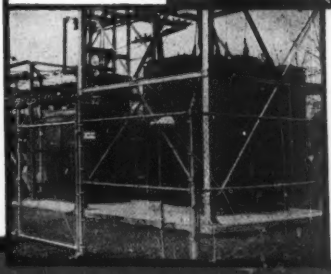
3. LOW LOSSES . . . The Moloney Load Tap Changer incorporates an ingenious method of by-passing the switching reactor to eliminate reactor copper losses. These losses are eliminated in all operating positions on 1¼% step apparatus and in half of the positions on ⅝% step apparatus.



Moloney three-phase Load Tap Changer with automatic control. Tap assembly contains Tap Selector Switch, Load Transfer Switches and Reversing Switch. Motor drive and auxiliary equipment are at lower right. Accessories shown are of low-tide, Moloney Automatic Control equipment features a compensating voltage regulating relay and an electronic time delay circuit. A complete line of remote-control and automatic controls and associated equipment is available.



Load Ratio Control Transformer rated 3000 Kva, 13200 volts Delta to 4330Y/2500 volts, equipped with automatically controlled Load Tap Changer.



Load Ratio Control Transformer rated 3000 Kva, 13500 volts Delta to 4330Y/2550. Load Tap Changer equipment provides plus or minus 10% regulation in 32-⅝% steps.

MOLONEY ELECTRIC COMPANY

Manufacturers of Power Transformers • Distribution Transformers • Load Ratio Control Transformers • Step Voltage Regulators • Unit Substations

Expanded Assembly Lines Increase CURVACORE Transformer Production

IT IS NOW EASIER to obtain *Curvacore* distribution transformers. Production facilities are expanded. You'll be able to take advantage of the inherent benefits of *Curvacore* transformers sooner.

Curvacore transformer design improvements give more performance for your distribution dollar. Cold rolled oriented steel strips have high flux carrying capacity and low hysteresis loss. The core steel is wound, shaped, annealed and cut into two turn lengths. Then each length is fed through the coil structure so that it retains its original core shape.

You benefit from these improvements:

1. 50% lower exciting current
2. Better ratio of losses
3. Improved short time thermal capacity
4. Size and weight reduced 15%
5. Regulation improved up to 15%

This wound core design provides a more efficient path for the magnetic flux, resulting in low exciting current. The *Curvacore* transformer has better thermal performance, too! Increased cooling area within the windings reduces the copper-to-oil temperature gradient, improves regulation and adds years to service life. Weight is reduced, making the *Curvacore* transformer compact, easy to handle and to install.

Curvacore is an Allis-Chalmers trademark.

Former Advantages Retaincd

In addition to *Curvacore* transformer design you still get *Spra-Bonderized* tanks with 3-coat baked-on finish of alkyd-resinous paint; simplified high voltage angle bushings with handy chuck type connectors; sturdy tank construction; high quality craftsmanship throughout.

For more information about the *Curvacore* transformer, contact your local Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3366

Typical core and coil assembly shown above. Present ratings of Curvacore transformers are 25 kva and below. Others will be available shortly.

ALLIS-CHALMERS